FORMERLY BIBLIFISHERIES

INDIAN FISTERIES ABSTRACTS



No. 1 Volume 21

January-March 1982

CENTRAL INLAND FISHERIES RESEARCH INSTITUTE BARRACKPORE, WEST BENGAL



INDIAN FISHERIES ABSTRACTS

(Formerly Bibliography of Indian Fisheries)

Volume : 21, No.1

January - March, 1982

Compiled & } by : D.D. Halder Abstracted } G.K. Vinci

V.V. Sugunan V.K. Unnithan

M.J. Bhagat

Bibliographic details & by : Anjali De Indexing

Typing : Samir Kumar Roy

A service from
The Information Section
Central Inland Fisheries Research Institute
Barrackpore, Pin : 743 101

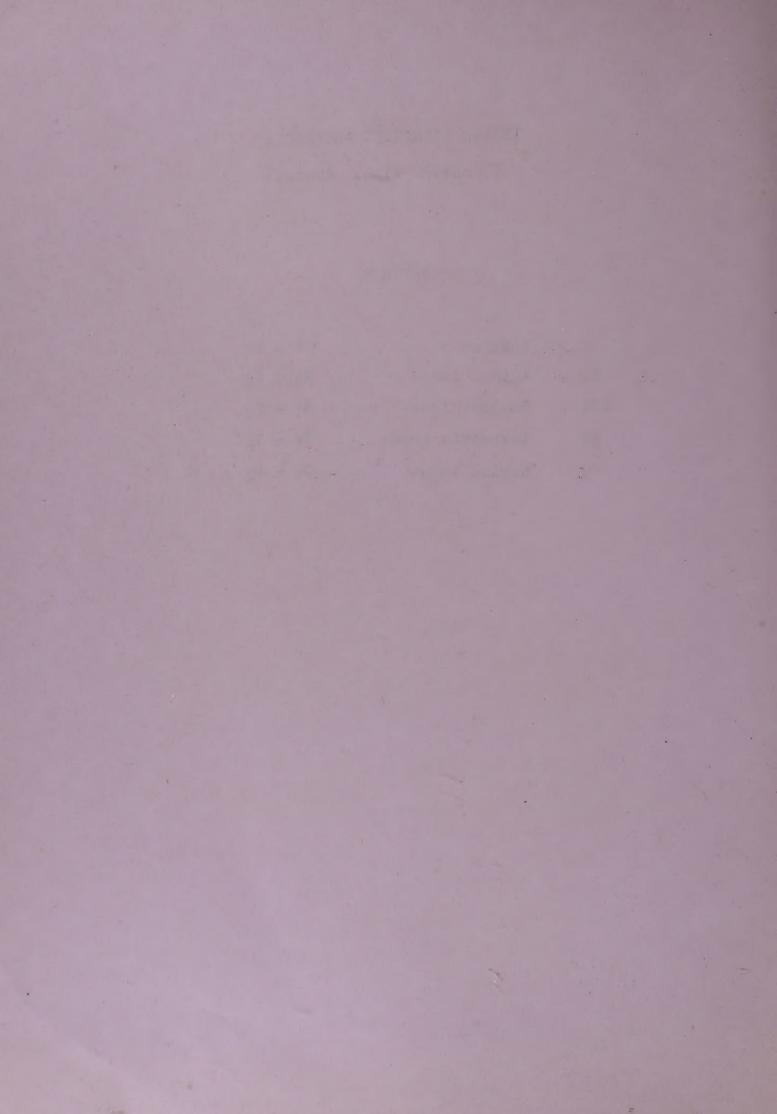
the state of the second of

INDIAN FISHERIES ABSTRACTS

(Indian Fish. Abstr.)

CONTENTS

I.	Entries	1 - 27
II	Author Index	A1 - A5
III	Subject Index	$s_1 - s_3$
IV	Taxonomic Index	T1 - T5
V	Serial Index	P1 - P2



I. ENTRIES

1. Anand, C.P., 1981

(College of Fisheries, University of Agricultural Sciences, Mangalore-575 OCP, India).
Studies on the chemical control of Psychrophilic bacterial spoilage of fish. ii The effect of antibiotics on the growth of psychrophilic bacteria isolated from marine fish.

Fish Technol., 18(1): 41-45.

Among the various antibiotics tried tetracyclines particularly chloro-tetracycline (CTC), chloramphenical and chlorostrep were found to be fairly effective at 8 to 10 ppm levels. A few resistant organisms and the useful combinations of anti-biotics for commercial application are discussed.

12 ref.

2. Anand, C.P. & T.M. Rudra Setty, 1981

(College of Fisheries, University of Agricultural Science, Mangalore-575 002, India).

Studies on the chemical control of psychrophilic bacterial spoilage of fish. III The effect of chemical preservatives on the growth of psychrophilic bacteria isolated from marine fish.

Fish. Technol., 18(1): 47-53.

Dehydroacetiv acid and ammonia were found to be very effective in checking the growth of all the cultures at all concentrations tried. The two nitro-furan derivatives namely, semicarbozone and AF-2 were fairly effective. 14 ref.

3. 1980

(College of Fisheries, University of Agricultural Science, Mangalore-575 002, India).
Studies on the chemical control of psychrophilic bacterial spoilage of fish. IV The effect of chemical preservatives on the growth of psychrophilic bacteria isolated from marine fish.

Fish. Technol., 18(1): 55-57.

Dehydroacetic acid and ammonia were found to be very effective in checking the growth of all the cultures at all concentrations tried.

4. Anon, 1981 Cheaper wooden fishing boats.

Fishing Chimes, 1(8): 34-36.

Research at the Central Institute of Fisheries
Technology has shown that it is possible to save as much as
35% of the total cost of a boat by replacing the conventional
construction material with cheaper ones.

5. Aravindaksha*, M.

(Central Marine Fisheries Research Institute
Substation, Bombay).

Shark attacks in Indian seas.

Seafd. Export J., 13(11): 29-30.

6. Aziz, Abdul,1980
(Dept. of Aquatic Biology, University of Kerala,
Trivandrum).
Ecology of the retting grounds in the back water
systems of Kerala.
Vijana Poshini, 1(1): 40-59. (Abstract in English)

Among others pollution problems, oxidation of organic matter and liberation of hydrogen sulphide create an ecosystem of microaerobic and anaerobic properties seriously affecting the fisheries. The nature, significance and consequences of this problem are examined in detail and their effects on fisheries are discussed. 2 ref.

7. Baliga, B.B.,1981
(Member. Editorial Board of

(Member, Editorial Board of Science & Culture, 92, Acharya Prafulla Chandra Road, Calcutta-700 009). Ocean bed prospecting.
Sci. & Cult., 47(9): 309-311.

Described in detail about the Manganese nodules and its recent location by R.V. Gaveshini of National Institute of Oceanography in the Seychelles basin of Indian Ocean.

- 8. Barrackpore Central Inland Fisheries Research Institute, 1979
 Annual Report, 1979: 132p.
- Fourth workshop, All India Co-ordinated Research
 Project, Brackishwater Fish Farming 24-25 October,
 1981 at Kakinada Centre of the Andhra Pradesh
 Agricultural University jointly organised by Central
 Inland Fisheries Research Institute and Andhra
 Pradesh Agricultural University (Mimco).
- Summer Institute on Farming Systems integrating
 Agriculture livestock and fish culture.
 Barrackpore 6 July 4 August, 1981.
- 11. Bhukaswan, Thiraphan, 1980.

 (Dept. of Fisheries, Ministry of Agriculture and Co-operations, Bangkok, Thailand).

 Management of Asian reservoirs fisheries.

 FAO Fisheries Technical paper 207, (FARI/T207)

 FAO, Rome: 69p.

It provides a synthesis of information of fish population studies, including predictions of fish potential yield, alternatives for management of fish populations and for management of the habitat.

- 12. Such, A.V. & K.R. Narayanan, 1981

 (Fisheries Department, Ahmedabad).

 A preliminary account of marine fish seed resources of Okhamandal.

 Seafd. Export J., 13(11): 25-27.

 2 ref.
- 13. Chandrasekaran, G. Edwin, 1979

 (CAS in Marine Biology, Porto Novo 6085202).

 Forked barbel and absence of pelvic fin in marine catfishes of the family Acriidae.

 Matsya, 5: 78-79.

 6 ref.

14. Chandrasekaran, G & B. Subba Rao, 1979.

(Hydrobiological Research Station, Tamil Nadu,
Fisheries Department, Octacamund).

On the growth and survival of rainbow trout reared
in stagmant pond at higher water temperature and
low dissolved oxygen.

Matsya, 5: 35-37.

A continuous twelve month experiment for rearing the trouts in stagnant pond was carried out. The trouts survived a maximum water temperature of 29°C and the lowest dissplved oxygen of 3.9 ppm. They grew to 60 g. in a year without artificial feed. 4 ref.

- 15. Chattopadhyay, G.N. & L.N. Mondal, 1980.

 (1. CIFRI, Barrackpore, West Bengal

 2. Bidhan Chandra Krishi Viswa Vidyalaya, Kalyani,
 West Bengal).

 Distribution of different inorganic forms of phosphorus in some brackishwater fish pond soil of West Bengal.

 3. Inland Fish. Soc. India, 12(1): 25-29.

 12 ref.
- 16. Chaudhuri, D.R., S.K. Bhattacharya & A.N. Bose, 1981.

 (Dept. of Food Technology & Biochemical Engineering, Jadavpur University, Calcutta-700 032).

 Prediction of drained weight in canned prawn under commercial conditions.

 Fish. Technol., 18(1): 59-60.

The general formula for the prediction of drained weight of canned prawn processed under laboratory condition has been modified. 2 ref.

17. Chaudhury, M., R. Chandra, H.P. Singh & V. Kolekar, 1980.

(Brahmaputra Survey Unit of the CIFRI, Gauhati-3, Assam).

On the trend and seasonal indices of fish catch statistics at Uzanbazar (Gauhati) landing centre.

J. Inland Fish. Sco. India, 12(1): 92-99.

A decreasing trend of the landings has been observed. The catches were highest during post-monsoon months and lowest during monsoon months. The highest and lowest monthly indices are in October and July respectively. 10 ref.

- 18. Chhaya, N.D., A.C. Buch & K.R. Narayanan, 1979.

 (Marine Biological Research Station, Port Okha).

 Observations on the fisheries of mullet and scope for its culture in Gulf of Kutch.

 Indian J. Fish. 26(1-2): 47-51.

 8 ref.
- 19. Chonder, S.L., 1979.

 (Inland Fisheries Training Centre of the Central Institute of Fisheries Education, Barrackpore, West Bengal).

 'Curved Normal' vertebral mutants in Cirrhina mrigala.

 Indian J. Fish., 26(1-2): 232-236.

Reports for the first time the occurence of curved and normal vertebral mutations in hypophysed <u>C</u>. <u>mrioala</u> fry. 7 ref.

- 20. Das, P., D. Kumar, A.K. Ghosh, D.P. Chakraborty &
 U. Bhawmick, 1980.
 (Central Inland Fisheries Research Institute,
 Barrackpore).
 High yield of Indian major carps against encountered hazards in a demonstration pond.
 J. Inland Fish. Soc. India, 12(1): 70-78.
 17 ref.
- 21. De, D.K., 1980

 (Central Inland Fisheries Research Institute,

 Barrackpore).

 Maturity fecundity and spawning of post-monsoon run

 of Hilsa. Hilsa ilisha (Hamilton) on the upper stretches

 of the Hooghly estuarine system.

 J. Inland Fish. Soc. India, 12(1): 54-63.

22. Desai, S.S., 1980
(Assistant Director of Fisheries, Raigad, Alibag 402 202, Maharashtra).
On estimation of yield from culture fishery.
J. Inland Fish. S.c. India, 12(1): 44-53.

Statistical data of 335 water sheets from six states in India covering nearly 3,00,000 ha water spread area is analysed to correlate yield with area. Probable effects of stocking on yield is discussed. 9 ref.

- 23. Devadoss, P. & P.K. Mahadevan Pillai, 1979.

 (Central Marine Fisheries Research Institute Centre, Mangalore).

 Observations on the food and feeding habits of the ecl, Muraenesox cinereus (Forskal) from Porto Novo.

 Indian J. Fish., 26(1-2): 244-247.

 4 ref.
- 24. Dhulkhed, M.H. & K Uma Kumari, 1979.

 (Mangalore Rosearch Centre of Central Marine Fisheries Research Institute, Mangalore).

 Relative abundance of age groups of oil sardine and its effect on fishery of Mangalore area.

 Indian J. Fish., 26(1-2): 40-46.

The oil sardine fishery appeared to be good when the O and 1 yr groups were equally and continually represented in the catches. The estimated average rate of instantaneous rate of mortality was 1.87. 13 ref.

25. D.V. Uma Devi & K. Shyamasundari, 1980.

(Dopt. of Zoology, Andhra University, Waltair-530 003).

Studies of the cepepod parasites of fishes of the Waltair Coast : Family Taeniacanthidae.

Crustaceana, 39(2): 197-208.

Eight species belonging to the family Taeniacanthidae were recorded, of which five are new to science. 10 ref.

26. Ghosh, A.N., 1981.

Management techniques in brackishwater prawn and fish farming including pen culture.

Fishing Chimes, 1(8): 41-48.

27. Ghosh, Λ.N. & P.K. Pandit, 1979.

- (1. Director (Inland Fisheries), The State Fisheries
 Development Corporation Ltd., 43, Shakespeare
 Sarani, Calcutta-17.
 - 2. Central Inland Fisheries Research Institute, Barrackpore).

On the rearing of fry of bhetki <u>Lates calcarifer</u> (Bloch) in brackishwater ponds.

Matsya, 5: 50-55.

18 ref.

28. Goel, P.K., B. Gopal & R.K. Trivedy, 1980.

(1&3. Department of Environmental Pollution, Science College, Karad 415 110, Maharashtra.

2. Dept. of Botany, University of Rajasthan, Jaipur-4).

Impact of sewage on freshwater ecosystems. I. General features of water bodies and sewage.

Int. J. Ecol. Enivron Sci., 6: 83-96.

Morphoretry of two man-made reservoir near Jaipur (26°49'N) has been described.

29. Goel, P.K., B. Gopal & R.K. Trivedi, 1980.

(1&3. Dept. of Environmental Pollution, Science College,
Karad-415 110, Maharashtra.

2. Dept. of Botany, University of Rajasthan, Jaipur-4). Impact of sewage on fresh water ecosystems II. Physico-chemical characteristics of water and their seasonal changes.

Int. J. Ecol. Enivron Sci., 6: 97-116.

This study shows that during the post decade the continued in-puts of sewage have lowered the pH and chlorides, but increased the contents of total dissolved solids, calcium and magnesium. 54 ref.

30. Gopal, Brij & Manjula Kulshreshtha, 1980.

(Dept. of Botany, University of Rajasthan, Jaipur-4).

Role of aquatic macrophytes as reservoir of nutrients and instheir cycling.

Int. J. Ecol. Enivron Sci., 6: 145-152.

It is observed that the aquatic macrophytes act as a large reservoir of nutrients (Na,K,Ca,Mg,N,P etc) through their ability to accumulate these nutrients in concentrations from a few to several hundred times greate F than in the sediments and upto several thousand times greate F than in water. 39 ref.

31. Gopal, T.K. Srinivasa & T.K. Govindan, 1981.

(Central Institute of Fisheries Technology, Cochin682 029, India).

Effect of frozen storage on the physical properties
of corrugated fibre-board Master Cartons and Waxed

Duplex Cartons.

Fish. Technol., 18(1): 35-39.

Deleterious effects due to prolonged exposure to moisture, effect of repeated wax-coating on water resisting capacity of the boards and the protection provided by increasing wax contents are reported. 2 ref.

32. Gupta, N.K. & C.L. Duggal, 1980.

(Dept. of Zoology, Panjab University, Chandigarh, India).

On Pangus sinensis HSU 1933 (Nematoda : Haplo nematidae).

A nematode parasite of freshwater fish, channa maruli s

at Ludhiana (Punjab), India.

Res. Bull. Punjab Univ., 31(1-4) : 87-89.

A brief description of <u>Pingus sinensis</u>, 1933, is given.

- 33. Hamsa, K.M.S. Ameer, 1979.

 (Mandapam Regional Centre of CMFRI, Mandapam Camp).

 On the moulting of Portunus pelagicus Linnaeus

 Indian J. Fish., 26(1-2): 247-249.

 3 ref.
- 34. Hosmani, S.P. & 5.G. Bharati, 1981
 (1. Dept. of Post-Graduate Studies and Research in Biology, University of Mysore, Manasa Gangotri, Mysore-570 006.
 - 2. Dept. of Botany, Karnatak University, Dharwar-580 003).

A new genus and species of alga from Karnataka (India).

J. Bombay Nat. Hist. Soc., 78(3): 579-580.

Sceneoocystis karnatakensis is described.

35. Iyer, T.S. Gopala Krishna & S.P. Damle, 1981.

(Bombay Research Cebtre of Central Institute of Fisheries Technology, 162, Sassoan Dock, Colaba, Bombay-400 005, India).

Isolation of Salmanella larochelle for the first time in India.

Fish. Technol., 18(1): 63-

Morphological, biochemical and serological characterstics of Salmonella larochelle is given. 4 ref.

- 36. Johal, M.S., 1981.

 (Post-Graduate Dept. of Zoology, S.G.N. Khaba College, Sri Ganganagar, Rajasthan, India).

 Ichthyo fauna of Ganganager District, (Rajasthan), India.

 Res. Bull. Panjab Univ., 32(1-4): 105-110.

 5 ref.
- 37. Johal, M.S. & K.K. Tandon, 1981.

 (Dept. of Zoology, Panjab University, Chandigarh).

 Fishes of Panjab.

 Res. Bull. Panjab Univ., 32(1-4): 143-154.

The paper described a dichotomus key for the fishes of Punjab. As many as 114 species and 4 sub species have been identified. 13 ref.

38. Joshi, B.D., D.K. Gupta & L.D. Chaturvedi, 1979.

(P.G. Department of Zoology, Hindu College, Mcradabad, U.P.).

Biochemical composition of some tissues of a freshwater fish Heterophoustes fossilis during winter months.

Matsya, 5: 47-49.

During winters months different tissues of <u>Heteropneustes</u> showed poor values in various chemical components as compared to the summer months. 18 ref.

39. Kamal, M. Yusuf, P.N. Jaitly & Λ. Mukherjee, 1982.

(Central Inland Fisheries Research Institute, Doranda Fish Farm, Ranchí, India).

An unusual case of spawning of a Chinese carp, Hypopthalmichthys molitrix (C&V)

Sci. & Cult., 48(1) : 42-43.

Reports the successful artificial fecundation of the ova of a dead female from the spawns of a dead male, 30 minutes after their death. 5 ref.

- 40. Kaushal, D.K., M.D. Pisolkar & Y. Rama Rao, 1980.

 (All India Co-ordinated Project Ecology and Fisheries of Freshwater Reservoir, CIFRI, Bilaspur, H.P.)

 Observations on the food habits of Tor putitora (Hamilton) from Govindsagar reservoir, Himachal Pradesh.

 J. Inland Fish. Soc. India., 12(1): 138-139.

 1 ref.
- (All India Co-ordinated Project on Ecology and Fisheries of Freshwater Roscrvoir, CIFRI, Bilaspur, H.P.)
 A note on the food habits of silver carp Hypophthal-michthys molitrix (valenceinnes) from Govindsagar reservoir (Himachal Pradesh).
 J. Inland Fish. Soc. India, 12(1): 129-130.
 - H. molitrix of Govindsagar reservoir subsists mainly on phytoplankton (93.03%) with a wide range of variation in the gut contents. 2 raf.
- 42. Kawatra, A.K., 1981.

 Impact of extension service in the development of fisheries in Pumjab.

 Fishing Chimes, 1(8): 29-33.
- 43. Kumaraiah, P. & G. Gnanaeela, 1981.

 An air breathing fish a day keeps the doctor away.

 Fishing Chimes, 1(8): 25-27.

All details of the culture technique of air-breathing fishes are described.

44. Kumar, Kuldip, 1980.

(Central Inland Fisheries Research Institute, Barrack-pore, West Bengal).

Laboratory studies on the intake of formulated feed by Labeo rohita and Clarias batrachus.

J. Inland Fish. Soc. India, 12(1): 118-120.

The fingerlings of L. rohita get satiated when fed @ 3% > 0.5 body wt. while 4% > 0.5% feeding rate is quite optimum for C. batrachus. 5 ref.

- 45. Kunju, M.M., 1979.

 (Calicat Research Centre of Central Marine Fisheries Research Institute, South India).

 Studies on the biology of Nematopalaemon tenuipes (Hender Ion) in Bombay coast.

 Indian J. Fish. 26(1-2): 65-81.

 18 ref.
- 46. Kurup, B. Madhusoodana & C.T. Samuel, 1979.
 (1. Dept. of Marine Science University of Cochin, Cochin-682 016.

 2. Prof. and Head of the Dept., Dept. of Industrial Fisheries University of Cochin, Cochin-682 016).
 Notes on a specimen of Ambassis dayi Bleeker with morphological abnormalities.

 Matsya, 5: 76-78.

 7 ref.
- 47. Kurup, P.G., 1980.

 (Dept. of Marine Science University of Cochin, Foreshore Road, Cochin-682 016).

 Studies on the physical aspects of the mud bank along the Kerala coast with special reference to the Purakad mud bank.

 Vijnanaposhini, 1(2): 1-12.

 9 ref.
- 48. Kuthalingam, M.D.K., P.V. Sreenivasan & S. Lazarus, 1979.

 (Vizhinja F. Research Centre of CMFR Institute,

 Vizhinja G., South India).

 Four new records of fishes from Indian seas.

 Matsya, 5 : 42-46.
- 49. Luther, G., 1979.

 (Vizhinja Research Centre of Central Marine Fisheries Research Institute, Vizhinjam).

 Anchovy fishing of South-West coast of India with notes on characteristics of the resources.

 Indian J. Fish. 26(1&2): 23-39.

The southern region lying between Cape Comorin and Quilon is the most productive for anchovies. Some details of the fisheries and biological characteristics of the anchovies of the Vizhinjam area are given. 17 ref.

50 Mammen, T.A., 1981.

Enough fish to go round?

Intensive Agriculture, 19(8): 29-32.

All the recent developments in the inland and marine Schemes of fisheries have been reviewed.

51. Marian, M. Peter, A.G. Ponniah, R. Pitchairaj & M. Narayanan, 1982

(School of Biological Sciences, Madurai Kamaraj University, Madurai-625 021).

Effect of feeding frequency on surfacing activity and growth in the air-breathing fish Heteropneustes fossilis. Aquaculture, 26(3-4): 237-244.

From the points of both feeding and conversion efficiency, feeding once a day in cultures of juvenile H. fossilis is recommended. 19 ref.

52 Masurekar, V.B. & S.R. Pal, 1979.

(Dept. of Zoology, Institute of Science, Madam Cama Road, Bombay).

Observations on the fluctuations in protein fat and water content in Cyprinus carpio (Linn) in relation to the stages of maturity.

<u>Indian J. Fish., 26(1-2)</u>: 217-224.

A gradual depletion was observed during maturation, and the least protein and fat content was observed in the spent individuals. 21 ref.

53. Memon, A.G.K., 1979.

(Zoological Survey of India, Madras).

A revision of the fringedlip tongue soles of the genus Paraplegusia Bleeker, 1865 (Family Cynoglossidae).

Matsya, 5: 11-22.

The genus Paraplaquesia is distributed in the tropical Indo-Pacific region, with only three species P. bilineata, P. blochi and P. japonica as valid. For these species a list of syronyms, morphology, relationships, information as type specimens and distribution are reported. 78 ref.

- 54. Mishra, Keshav Dev & Rais Datta Gaur, 1979.

 (1. School of Studies in Zoology, Jiwaji University,

 Gwalior. 2. Prof. and Head of the Department of

 Zoology, Government Science College, Gwalior, M.P.)

 Ultra structural studies on the synaptic organelles in

 the brain of Channa Gachue (Ham.) (Pisces, ophiocephalidae).

 Matsya, 5: 56-61.
- 55. Moitra, A., P.K. Pandey & J.S. Datta Munshi, 1979.

 (Post-Graduate Department of Zoology, Bhagalpur University, Bhagalpur-812 007).

 Effect of L thyroxine, athy los-trenol and vitamin B on the body composition of an air-breathing fish Clarias batrachus (Linn).

 Matsya, 5: 38-41.

The moisture content of the body decreased in Vitamin B complex and increased in L-thyroxine treated group. An increase in the protein content was observed by Ethylestrenol and Vitamin B complex feed. The lipid content in experimental groups did not vary much over the control. 26 ref.

- 56. Moitra, Shankar Kumar, 1980.

 (Dept. of Zoology, Burdwan University, Burdwan, W.B.).

 Periodicity of the gonadotropin content in the pituitary glands of an Indian freshwater major carp, Catla catla Ham.

 J. Inland Fish. Soc. India, 12(1): 14-24.
 - Biochemical estimations of the total protein content in the pituitary glands of Colla catla revealed the relationship existing between the gonadotrophic cells of the proximal pars distalis and the quantum of the protein hormore gonado tropin. 36 ref.
- 57. Mojunder, P. & S.S. Dan, 1979.

 (Waltair Research Centre of CMFR Institute, Waltair).

 Studies on food and feeding habits of catfish

 Tachysurus tenuispinis (Day).

 Indian J. Fish. 26(1-2): 115-124.

 6 ref.

- 58. Murty, Sriramachandra V., K.A. Narasimham & W. Venugopalan, 1979.

 (Research Centre of Central Marine Fisheries Research Institute, Kakinada).

 Survey of window pane dyster (Placenta placents)

 resources in the Kakinada Bay.

 Indian J. Fish., 26(1-2): 125-132.
- 59. Nagabhushanam, R. & M.Y. Kulkarni, 1979.

 (Dept. of Zoology, Marathwada University, Aurangabad).

 Embryonic and larval development of the prawn

 Macrobrachium kistnessis.

 Indian J. Fish (26(1-2).: 1-12.

 20 ref.
- 60. Nair, G.R. Jayasree, 1980.
 (Dept. of Zoology, Govt. College, Madappally, Kerala)
 Study of parasitic copepods belonging to the family
 lernanthropidae.
 Vijnanaposhini, 1(2): 29-36.
 10 ref.
- 61. Nair, Somasekharan K.V., 1979.

 (Calicut Research Centre of Central Marine Fisheries Research Institute, Calicut)

 Food and feeding habits of (Schneider) at Calicut.

 Indian J. Fish., 25(1-2): 133-139.

 12 ref.
- 62. Naomi, T.S., 1979.

 (Karwar Research Centre of CMFR Institute, Karwar).

 On a swarm of amphipods Atylus minikoi (Walker) in the shallow waters of the Karwar Bay.

 Indian J. Fish., 26(1-2): 227-229.

 5 ref.
- Narasimham, K.A.G., Sudhakara Rao, Y. Appanna Sastry & W. Venugopalam, 1979.

 (Kakinada Research Centre of Central Marine Fisheries Research Inatitute, South India).

 Demersal fishery resources off Kakinada with a note on economic of commercial trawling.

 Indian. J. Fish., 26(1-2): 90-100.

The important demersal fisheries resources during the period 1971-1974 are given in this paper. The economics of commercial trauling by the three types of boats operated by the industry are worked out. 3 ref.

64. Nasar, S.A.K. & M. Dasgupta, 1979.

(Dept. of Zoology, School of Life Sciences, North-Eastern

On the occ- Hill University, Shillong-793 003).

urrence of Ichthyophthiriasis in Acrossocheilus hexagon legis

(McClelland).

Matsya, 5: 73-74.

Discussed about the attack of Icthyophthirius multifilis. In fected fish can be healed by a both of Nacl or trypaflavin.

12 ref.

65. Natarajan, A.V. & V. Pathak, 1980.

(Central Inland Fisheries Research Institute,
Barrackpore, West Bengal).

Bioenergetic approach to the productivity of
man-made lakes.

J. Inland Fish. Soc. India, 12(1): 1-13.

Various principles of energy transformation and dynamic models to explain the productivity of man made lakes have been discussed. 17 ref.

66. Natarajan, P., P. Devadoss & K. Muniyandi, 1979.

(Central Marine Fisheries Research Institute Centre,
Portonovo).

Fisheries of Vellar Estuary, Porto Novo.

Indian J. Fish., 26(1-2): 201-206.

Results of a study of the fishery of fin fishes and shell fishes in the Veller Estuary (11°29 N; 79° 46' E) are reported. 9 ref.

67. Natarajan, P. & R. Soundrarajan, 1979.

(Regional Centre of Central Marine Fisheries Research Institute, Mandapam Camp).

Note on the occurence of Parreysia (Parreysia)

Wynequngaensis (LEA) (Eulamellibranchiata) and Opeas anuandalei Godwin Austen (Stylommatophora) in Porto Novo.

Indian J. Fish., 26(1-2): 241-243.

3 ref.

- 68. Nath, Surendra, 1979.

 (Professor & Head, Dept. of Zoology, Islamic College of Science & Commerce, Srinagar, Kashmir)

 On the food, feeding habits and alimentary canal of Crossocheilis latius diplochilus (Heckel) in Kashmir Valley and adjacent areas.

 Matsya, 5: 74-76.

 9 ref.
- 69. Nath, Surendra, 1981.

 (Dept of Zoology, Islamic College of Science & Commerce, Srinagar, Kashmir).

 On a collection of cobitid loaches of the genus noemacheilus Van Hasselt from Poonch Valley (Jammu and Kashmir).

 J. Bombay Nat Hist. Soc., 78(3): 612-613.

 11 ref.
- 70. Nayar, S. Gopalan & K. Radhalakshmi, 1981
 (Central Institute of Fisheries Technology, Cochin-682 029, India).
 Studies on Raschel knotless netting.
 Fish. Technol., 18(1): 13-16.

The quality of knotless webbing is evaluated. A method has been presented to fix up yarn specification for Raschel knotless nettings equivalent to a given netting. 7 ref.

71. Nigam, Harish C., 1982

(Zoology Dept. Lucknow Christian College, Lucknow, 226 001).

A first report of the systemic valve in the truncus arteriosus of the Indian frog Rana tigerina (Daud).

Curr. Sci., 51(2): 107-108.

The presence of a systemic valve and its possible role in the distribution of blood through the truncus arteriosus is reported. 2 ref.

72. Panda, N. & J.C. Roy ed.,
Souvenir of the Seminar on Fresh Water Fish Seed
production, 1982 held at Cuttack on February 17 and
18, 1982.

73. Pathak, S.C., Y.S. Yadav, D.N. Singh & P.V. Dehadrai, 1980.

(All India Co-ordinated Research Project on the Air-Breathing Fish Culture, CIFRI, Gauhati-3)

Observations on the mixed culture experiment on air breathing fishes conducted in derelica and freshwater ponds in Gauhati (Assam).

J. Inland Fish. Soc. India, 12(1): 112-115.

The production figures obtained from the experiments in derelict water body as well as fresh water pond have proved the economic viability of the culture technique. 6 ref.

- 74. Pathak, V., V.V. Sugunan, 1980.

 (Central Inland Fisheries Research Institute, Barrackpore).

 Effect of solar eclipse on the photosynthetic processes and behaviour of biotic communities in Nagarjunasagar aquatic ecosystem.

 J. Inland Fish. Soc. India, 12(1): 121-126.

 4 ref.
- 75. Pathani, S.S. & S.M. Das, 1980.

 (Dept. of Zoology, D.S.B. University College,
 Nainital-263 002).

 A note on length weight relationship and seasonal
 condition factor of Mahseer Tor tor and T. Putitora

 (Hamilton).

 J. Inland Fish. Soc. India, 12(1): 140-143.

 10 ref.
- 76. Pati, S., 1979.

 (Dept. of Zoology, Ivenshaw College, Cuttack, Orissa)

 On the maturation and spawning of Chinese pomfret

 Pampus Chinensis (Euphrason) from Orissa coast.

 Indian J. Fish., 26(1-2): 150-162.

 9 ref.
- 77. (Department of Zoology, Ravenshaw College, Cuttack-753 003, India).
 Observations on the lunar and tidal influence on gill netting in the Bay of Bengal.
 Fish. Technol., 18(1): 25-27.

Catchability was highest during the first quarter and lowest in the fourth quarter of the moon. Extensive use of lowest in the fourth quarter of the moon. Extensive use of lowest in the fourth quarter of the moon. A plausibility bluish grey nylon twine has largely elimineted the visibility bluish grey nylon twine has largely elimineted explanation of gear during brighter phase of moon. A plausible explanation of gear during neap tide compared to that of spring tide for high catch during neap tide compared to that of spring tide is offered. 13 ref.

78. Patnaik, S, 1980.

(CIFR Substation, Cuttack, Orissa)

(CIFR Substation, Cuttack, Orissa)

Toxicity of organic copper compound (Cutrine) on some algae and fish.

J. Inland Fish. Soc. India, 12(1): 136-137.

Organic copper compound (cutrine) at concentations 2ppm and above are toxic to algae like M. aeruginosa, A. spiroides, p. inconspicuum but the same chemical up to 10 ppm are not toxic to fishes like L. rohita and C. mrigala. 6 ref.

- 79. Pillai, S. Krishna, 1979.

 (Bombay Research Centre of CMFR Institute, Bombay)

 On occurrence of mackerel Rastrelliger kanagurta

 (cuvir) in distant waters off Bombay.

 Indian J. Fish., 26(1-2): 225-226

 5 ref.
- 80. Pillai, S. Krishna & V.S. Somvanshi, 1979.

 (Bombay Research Centre of CMFR Institute, Bombay).

 A case of complete albinism in marine cat fish Arius caelatus (Valenciennes)

 Indian J. Fish., 26(1-2): 240-241.

 9 ref.
- (C.M.F.R.I., Research Centre, Bombay)

 A new record of the Grub fish, Parapercis alboqutta

 (Gunther) from Bombay waters.

 Indian J. Fish., 26(1-2): 237-238.

 4 ref.
- 82. Prasad, N.S.H., 1981.

 Want relief from hatching head aches ? Try shirgur
 Shirgur's hatcheries.

 Fishing Chimes, 1(8): 17-22.

Given particulars of a carp hatchery standardised by

- 83. Prasad, R.R., 1979.

 (Fisheries Research Station, Darbhanga-846 001).

 Carp spawn potentiality of Palezaghat (Bihar).

 Indian J. Fish., 26(1-2): 230-232.
- 84. Radhakrishnan, S., 1980.

 (Dept. of Aquatic Biology, University of Kerala, Trivandrum).

 Studies on certain fish parasites and the nature of infe tation along the South-West coast of India.

 Vijnanaposhini, 1(2): 53-66.

A taxonomi® survey of the protozoan, helminths and crustacean parasites, detailed studies on the incidence and intensity of different parasitic infestations in relation to the size and lengths (age) of the host and fish along the coast, description of the mode of attachment of the parasites to the host tissues, the histopathological changes associated with different infestations, changes in the peripheral blood and in the biochemical composition of the liver and white muscle are included in this work.

85. Rajan, K.V. Mohan, B. Meenakumari & R. Balasubramanyam,
(Central Institute of Fisheries Technology, Cochin-29,
India).
Spiny lobsters and their fishing techniques.
Fish. Technol., 18(1): 11-11.

Fishing techniques for spiny lobsters in India, Sri Lanka, United States, Australia, South Africa, United Kingdom, Ireland and Portngal are discussed. 61 ref.

86. Ramalingam, V., 1981.

(Dy. Director, M.P.E.D.A.)

West Europe - A growing shrimp market.

Seafd. export J., 13(11): 9-23.

6 ref.

87. Ramamirtham, C.P., 1979.

(Central Marine Fisheries Research Institute, Cochin-18)

On groulation of Indian Ocean Waters East of Maldives

during the post-monsoon period.

Indian J. Fish. 26(1-2): 82-89.

The circulation patterns in the Maldive region between the 71° and 80° E meridians within the equator and 8°N are discussed. A large cyclonic gyre exists in the northern regions and are anticyclonic one in the southern region. 14 ref.

88. Rao, C.C., Panduranga, D.², Imam Khosim Saheb, S.S. Gupta, G.R. Unnithan, S.T. Chari, R. Srinivasan, T. Santhanaraj⁸, and K.V.N. Pillai⁹,

(1-4: CIFT, Kakinada, 533 003, India
5: CIFT, Cochin, 682 029, India
6-9: Dept. of Fisheries, Madras).
Comparative study of tradition and improved containers
for transportation of fresh fish.
Fish. Technol., 18(1): 29-33.

Traditional bamboo basket and expanded polystyrene insulated plywood box (second hand tea chest) were compared for transportion of fish from Kakinada to Madras by rail. The former was found to be cheaper and as efficient is the batter. 5 ref.

- 89. Rac, D. Ramananda, 1981.

 (Central Institute of Fisheries Education, Versova, Bombay-400 081).

 Edible fish powder from Dhoma fish.

 Seafd. Export J., 13(12): 19-27.

 14 ref.
- 90. Rao, H.N. Sathyanarayan, 1981.

 (College of Fisheries, Mangalore, India)

 Induced sex reversal in fish.

 Jalashri U.A.S. Students Magazine College of Fisheries,

 Mangalore: P-27.

This is the first report of successful sex reversal in Cyprinus carpio. 17 L-methyl - testosterone (male hormone) were administered to common carp hatchlings through feed at a concentration of 200 ppm for 131 days starting from the 2nd day of hatching.

91. Rao, K. Srinivasa & M. Rama Murty, 1981.

(Dapt. of Zoology, Andhra University, Waltair, (A.P.)

Occurrence of Zebrias japonicus (Blaker) (Soleidae: Pisces) in the Bay c. Sengal, Off Visa Khapatnam.

J. Bombay Nat. Hist. Soc., 78(3): 614-615.

Described a new species Z. japonicus recorded for the first time from Indian waters. 7 ref.

92. Rao, Sudhakara G., 1979.

(Kakinada Research Centre of Central Marine Fisheries Research Institute, Kakinada).

Observations on the marine prawn fishery by shore seine at Kakinada.

Indian J. Fish., 26(1-2): 52-64.

The stimated annual prawn landings by shore-seines at Kakinada varied from 13.9 to 57.3 tonnes during 1967-1971. 6 ref.

93. Rao, T. Appa, 1979.

(Waltair Research Centre of CMFR Institute, Waltair).

Alkaline phosphatase activity in offaries of some clupeoids.

Indian. J. Fish., 26(1-2): 253-255.

The phosphate activity rises to a peak in the maturing stage (II) and declines in the mature stage (Stage III) to about the same level or slightly higher level than in the immature stage (stage I). 4 ref.

94. Rao, Y. Rama, D.K. Kaushal, M.D. Pisolkar & V.K. Sharma, 1981.

(All India Co-ordinated Project on the Ecology and
Fisheries of Freshwater Reservoir, CIFRI, Bilaspur, H.P.).

On the occurrence of silver carp Hypophthalmichthys
molitrix (Valenceinnes) in Govindsagar reservoir,
Himachal Pradesh.

J. Inland Fish. Soci, India, 12(1) : 134-135.

Reported the occurrence of H. molitrix in Govindsagar reservoir for the 1st time. 1 ref.

- 95. Rattan, R.S., 1980
 (Government College, Ropar, India).

 A note on an abnormal cosmarium corda.

 Res. Bull. Panjab Univ., 31(1-4): 107-108.

 2 ref.
- 96. Roy, Rathindra Nath, 1981.

 (Shri AMM Murugappa Chettiar Research Centre,
 Tharamani, Madras, 600 042).

 Village integrated energy systems.

 ICLARM Newšletter, 4(2) : 12-15.

Discussed all about energy systems, the problem of fishermen community.

97. Sastry, K.V. & S.K. Sharma, 1979.

(Dept. of Zoology, D.A.V. College, Muzaffarnagar)

Endrin induced hepatic injury in Channapunotetus (Ham).

Indian J. Fish., 26(1-2) : 250-253.

The effect of a sublethal concentration (0.01 mg/1) of endrin on the histological changes in the liver of a teleost Channa punctatus has been studies. 11 ref.

98. Saxena, O.P., H.K. Bhatia, Veena Chowdhury, 1979.

(Cell Biology Research Laboratory, Zoology Research Laboratories, M.M. College, Modinagar-201 204).

Cytological study of oocytes of the fish, Mastacembenus armatus with particular reference to the localization of proteins and nucloic acids.

Matsya, 5: 1-10.

To the developing occyte of the fish M. armatus the main cytological changes occur within the nucleof (germinal vesicle) and cytoplasm. Circumstantial evidence suggests that nucleolii are involved in protein synthesis. 25 ref.

99. Setty, M.G., Anantha Pad Manabha, 1981.

(National Institute of Oceanography, Dona Panla, 403 004, Goa, India).

Future of Ocean resources: The next 25 years.

J. Scient. Ind. Res., 40(11): 701-708.

100. Sharma, S.V., 1979.

(Nagarjuna University, Nagarjuna agar-522 510).

On the correct year of publication of the oiginal description of the bagrid catfish librus vittatus Bloch (Silu Fiformes: Bagridae).

Matsya, 5: p-80.

Original description of the bagrid cat fish Mystus vittatus has been variously cited. But the original description first appeard in Naturgescheichte der Aulsandischem Fische pt. 8 Taf. 371 in 1594. 7 ref.

- 101. Sharma, V.K., 1980.

 (Reservoir Fisheries Project, Central Inland Fisheries, Bilaspur, (Himachal Pradesh).

 A peculiar case of abnormality of callular fin in cerassius auratus (Linn).

 J. Inland Fish. Soc. India, 12(1): 127-128.

 12 ref.
- 102. Shetty, H.P.C., 1981.

 (College of Fisheries, Mangalore, India).

 The scope for aquaculture in India.

 Jalashri, U.A.S. Students' Magazine College of Fisheries, Mangalore: 1-6.
- 103. Shyam Sunder, H.S. Raina & K.K. Vass, 1980
 (Srinagar Research Centre of the CIFRI, Harwan-191 123, Srinagar, Kashmir).
 An incubator designed for Schizothoracids fish seed production.

 J. Inland Fish. S. J. India, 12(1): 131-133.
- 104. Singh, R.K., N.P. Shrivastava & V.R. Desai, 1980.

 (All India Co-ordinated Research Project on the Ecology and Fisheries of Freshwater Reservoir, Rihand Turra, Mirzapur, U.P.)

 Seasonal and diurnal vaviations in physico-chemical conditions of water and plankton in lotic sector of Rihand reservoir (Uttar Pradesh).

 Rihand Fish. Soc. India, 12(1): 100-111.

105. Singh, S.B., S.R. Ghosh, P.V.G.K. Reddy, R.K. Dey & B.K. Mishra, 1980
(CIFR Substation, Cuttack, Orissa)
Effect of aeration on feed utilization by common carp fingerlings.

J. Inland Fish. Soc. India, 12(1): 64-69.

Aeration favoured feed utilization and fish growth. The growth of fish with aeration was nearly 5 times over the initial size without any change of water for 70 days, whereas it was only about 2 times in pools without aeration where water had to be changed every week. The computed gross and net production in both the sets are also presented. 3 ref.

- 106. Sinha, R.K., S.P. Singh & S.B. Singh, 1980.

 (P.G. Dept. of Zoclogy, Magadh University, Bodh-Gaya, Bihar).

 A deformed specimen of Catla catla Ham.

 J. Inland Fish. Soc. India, 12(1): 116-117.

 4 ref.
- 107. Somalingam, J., 1981.

 Pre and post spawn stocking and nursery management.

 Fishing Chimes., 1(8): 49-53.

Described the methods of nursery management.

- 108. Soni, D.D. & Maya Kathal, 1979.

 (Dept. of Zoology, University of Sagar, Sagar)

 Length-weight relationship in Cirrh num mrigala (val.)

 and Cyprinus carpio (Hamilton).

 Matsya, 5: 69-72.

 11 ref.
- 109. Srinivasarengam, S., 1979.

 (Madras Research Centre of CMFR Institute).

 Occurrence of a large shoal of Javanese cownose Ray, Rhinoptera javanica Muller & Henle in the Bay of Bengal Off Madras.

 Indian J. Fish., 26(1-2): P-239.

 3 ref.

110. Sugunan, V.V., 1980.

(CIFRI, Barrackpore)

Seasonal fluctuations of plankton of Nagarjunasagar reservoir, A.P.

J. Inland Fish. Soc. India, 12(1): 79-91.

The standing crop of plankton showed two peaks one in summer and other in winter. Trends in total alkalinity, nitrogen, specific conductivity and Morpho-edaplic indicaswere similar to those of plankton. Total alkalinity and specific conductivity exhibited similar trends as Myxophyceae in all sectors except the lotic. The standing crop of plankton was maximum during the period of minimal inflow and outflow and vice versa. The blooming Microcystis was observed during the minimal mean depth. The utilization of plankton as food by the existing stock of commercial fishes was poor indicating the necessity of stocking suitable species.

- 111. Sukumaran, K.K., 1979.

 (Central Marine Fisheries Research Institute Centre, Mangalore).

 Studies on the fishery and biology of Hippolysmata ensirostris Kemp in Bombay coast.

 Indian J. Fish., 26(1-2): 140-149.

 8 ref.
- 112. Sundararaj, V.P. Natarajan & M.D.K. Kuthalingam, 1981
 (Fisheries College, Tuticorin).
 Scope of chanos farming.
 Seafd. Export J., 13(12): 9-18.
 39 ref.
- 113. Tandon, K.K., P. Kaur, Kiranjit Kaur & Guravtar Singh, 1979.

 (Dept. of Zoology, Punjab University, Chandigarh).

 Histological studies on the brain areas of three

 fishes.

 Matsya, 5: 62-68.

Deals with the interpretation on the known areas of the mid and hind brain in relation to ecological niches of Garra lamta, L. dero and Channa punctatus. 9 ref.

- 114. Tandon, K.K., V. Parkash & B.S. Sahota, 1980.

 (Dept. of Zoology, Punjab University, Chandigarh).

 Comparative study of Oste of ranium, Visceral skeleton and Weberian apparatus of Barilius bola (Ham) Barilius bendelisis (Ham) and Laboo dero (Ham.)

 Res. Bull. anjab Univ., 31(1-4): 9-24.
- 115. Thakur, N.K., 1980.

 (Air-breathing Fish Culture unit of the CIFRI,

 Mithapur Fish Farm, Patha-800 001)

 Notes on the embryonic and larval development of an air breathing catfish Clarias batrachus (Linn).

 J. Inland Fish. Soc. India, 12(1): 30-43.

 15 ref.
- 116. Thomas, P.A., 1979.

 (Vizhinjam Research Centre of CMFR Institute).

 Boring sponges distructive to economically important molluscan beds and coral reefs in Indian seas.

 Indian J. Fish., 26(1-2): 163-200.

 34 ref.
- 117. Varghese, M.D., 1981.

 (Dept. of Aquatic Biology & Fisheries University of Kerala, Trivandrum-695 007, India).

 On the importance of Mesopodopsis zeylanica (crustacea, Mysidacea) as food of fish.

 Fish. Technol., 18(1): 61-62.

 7 ref.
- 118. Varghese, M.D., A.K. Kesavan Nair, V.C. George & A.A. Khan, 1981.

 (Burla Research Centre of Central Institute of Fisheries

 Technology, Burla-768 017, India).

 Estimation of fish production from Hirakud reservoir.

 Fish. Technol., 18(1): 17-23.

A suitable procedure based broadly on stratified random sampling for estimation of fish production is described. The total fish production for the years 1978 and 1979 along with seasonal variation of different species. 4 fig. 3 tab. 17 ref.

- 119. Vasisht, H.S., 1975.

 (Dapt. of Zoology, Panjab University, Chandigarh)
 Reporting the occurrence of the Bryozoan, Lophopodella carteri (Hyath) from the municipal park pond,
 Ambala city.
 Res. Bull. Punjab Univ., 25(1-4); P-111.
 7 ref.
- 120. Vasisht, H.S. & B.B. Sofft, 1975

 (Dept. of Zoology, Punjab University, Chandigarh).

 Crustacean fauna of the manicipal park pond,

 Ambala city.

 Res. Bull. Punjab Univ., 26(1-4): 113-114.

 10 ref.
- 121.

 (Dept. of Zoology, Punjab University, Chandigarh).

 The epizotic fauna of Eichharine in the municipal park pond, Ambala City.

 Res. Bull. Punjab Univ., 26(1-4): 115-116.

 4 ref.
- 122. ______, 1975

 (Dept. of Zoology, Punjab University, Chandigarh).

 Rotifer fauna of the minicipal park pond. Ambala City.

 Res. Bull. Punjab Univ., 26(1-4) : 117-118.

 17 ref.
- 123. Yohannan, T.M., 1979.

 (Calicut Research Centre of CMFR Institute, Calicut).

 The growth pattern of Indian mackerel.

 Indian J. Fish., 26(1-2): 207-216.

The modal values for 1970-74 indicate that the mackerel grows to about 21 cm by the end of 8 months and by the end of 1st year the lenght is 22cm. The indication is that as the gonadial growths sets in there is a drastic reduction in linear growth. 16 ref.



II AUTHOR INDEX

Every author's name appearing in the original article is listed alphabetically, including corporate bodies (Societies, organisations etc.), whether accurring assingle or multiple words. (Reference is given to the serial no.of the entry).

Anand, C.P	1,2,3
Anon	4
Aravindakshan, M	5
Aziz, Abdul	6
Balasubramanyan, R	85
Baliga, B.B.	7
Barrackpore Central Inland	4-
Fisheries Research •••	8,9,10
Institute	· ·
Bharti, S.G.	34
Bhatia, H.K.	98
Bhattacherya, S.K.	16
Bhowmick, U.	20 .
Bhukaswan, Thiraphan •••	11
Bose, A.N.	16
Buch, A.C.	18 12
Buch, A.U.	20
Chakraborty, D.P.	17
Chandra, R.	14
Chandrasekharan, G. '	13
Chandrasekharan, G. Edwin	16
Chaudhuri, D.R.	17
Chaudhury, M.	88
Chari. S.T.	15
· Chattopadhyay, G.N.	38
Chaturvedi, L.D.	18
Chhaya, N.D.	19
Chonder, S.L.	98
Chowdhury, Veena	35
Damle, S.P.	57
Dan, S.S.	64
Dasgupta, M.	20
Das, P.	75
Das, S.M.	, 55
Datta Munshi, J.S.	21 /
De, D.K.	105
Dey, R.K.	22
Dosai, S.S.	104
Dosai, V.R.	

	23. & 66
Devadoss, P.	24
Dhulkhed, M.H.	
Duggal, C.L.	32
Gaur, Ravi Datta	54
George, V.C.	118.
Ghosh, A.K.	20
Ghosh, A.N.	26 & 27
Ghosh, S.R.	105
Gnanacela, G.	43
Geel, P.K.	28 & 29
Gopal, B.	28,29 & 30
Govindan, T.K.	. 31
Gupta, D.K.	38
Gupta, N.K.	32
Gupta, S.S.	88
Hamsa, K.M.S. Ameer	33
Hosmani. S.P.	34
Iyer, T.S. Gopalakrishna	35
Jaitly, P.N.	39
Johal, M.S.	36 & 37
Joshi, B.D.	38
Kamal, M. Yusuf	39
Kathal, Maya	108
Kaur, Kiranjit	113
Kaur, P.	113 40-41 & 94
Kaushal, D.K.	40-,41 & 94 42
Kawatra, A.K.	118 ,
Khan, A.A.	88
Khasim Saheb Imam	17
· Kolekar, V.	59
Kulkarni, M.Y.	30
Kulshreshtha, Manjula	43
Kumaraiah, P.	20
Kumar, D.	44
Kumar, Kuldip	45 .
Kunju, M.M.	45 .
Kurup, B. Madhusoodana	47
Kurup, P.G. 48 &	
Kuthallnyam, M.D.K.	48
Lazarus, 5.	49
Luther, G.	50
Mammen, T.A.	51
Marian, M. Peter	52
Masurekar, V.B.	85
Meena Kumari, B.	53 53
Menon, A.G.K.	105
Mishra, B.K.	

Michael W. C.	
Mishra, Keshav Dev	54
Moitra, A.	55
	56
Mojumder, P.	57
Mondal, L.N.	15
Mukherjee, A	39
AD 4 14 14	66
Murty, Sriramachandra V	58
	59
	- 118
Nair, G.R. Jayasree	[,] 60
Nair, Somasekharan K.V.	61
	62
	58 & 63
	12 & 18
Narayanan, K.R.	
Narayanan, M.	51
	64 ,
Natarajan, A.V.	65
	66,67 & 112
ita ori y	68 & 69
Nayar, S. Gopalan	70
Nigam, Harish C	71 .
Pal, S.R.	52
Panda, N.	72
Pandey, P.K.	55 💢 🔭
Pandit, P.K.	27
Panduranga, D.	88
Parkash, V.	114
Pathak. S.C.	73
Pathak. V.	65 & 7.4
Pathani, S.S.	75
Pati S.	76 & 77
Patnaik. S.	78
Dillai KavaNa	. 88
n:17 = : D !/ Mahadevan	23
Pillai, S. Krishna	79,80 & 81
Pisolkar, M.D.	40,41 & 94
Pitchairaj, R.	. 51
Ponniah, A.G.	51
Ponntall, M.S.H.	82
Prasad, N.S.H.	83
prasau. N. O.	84
Radha Krishnan, S.	70
Radhalakshmi, K.	103
Raina. N.S.	85
Rajan, K.V. Mohan	86
Ramalingam, V.	_ 87.
Ramamirtham, C.P.	91
Ramamurthy, M.	14
Rao, 8. Subba	

```
88
Rao, C.C.
                                       89
Rao, D. Ramanande
                                       90
Rao, H.N. Sathyanarayan
                                       91
Rao, K. Srinivasa
                                       63 & 92
Rao, Sudhakara
                                       93
Rao, T. Appa
                                       40,41 & 94
Rao, Y. Rama
                                        95
Rattan, R.S.
                                        105
Reddy, P.V.G.K.
                                        72
Roy, J.C.
                                        96
Roy, Rathindra Nath
                                        2 & 3
Rudra, T.M.
                                        114
Sahota, B.S.
                                        46
Samuel, C.T.
                                        88
Santhanaraj, T.
                                        97
Sastry, K.V.
                                        63
Sastry, Y. Appanna
                                        98
 Saxena, O.P.
 Sethy, M.G. Anantha
                                        99
 Padmanabha
                                        97
 Sharma, 5.K.
                                        100
 Sharma, S.V.
                                         94 & 101
 Sharma, V.K.
                                         102
 Shetty, H.P.C.
                                         104
 Shrivastava, N.P.
                                         25
 Shyamasundari, K.
                                         103
 Shyam Sander
                                         113
 Singh, Guravtar
                                         17
 Singh, H.P.
                                         104
 Singh, R.K.
                                         105 & 106
 Singh, S.B.
                                         106
  Singh, S.P.
                                         106
  Sinha, R.K.
                                         120,121 & 122
  Sofft, B.B.
                                         107
  Somalingam, J.
                                          80 & 81
  Somavanshi, V.S.
                                          108
  Soni, D.D.
                                          67
  Soundrarajan, R.
                                          48
  Sreenivasan, P.V.
                                          31
  Srinivasa, Gopal T.K.
                                          88
  Srinivasan, R.
                                          109
  Srinivasarengan, S.
                                          74 & 110
  Sugunan, V.V.
                                          111
  Sukumaran, K.K.
                                         . 112
   Sundararaj, V.
                                          37,113 & 114
   Tandon, K.K.
                                         . 115
   Thakur, N.K.
```

Thomas, P.A. 116 Trivedy, R.K. 28 & 29 Uma Devi, D.V. 25 Uma Kumari, K. 24 Unnithan, G.R. 88 Varghese, M.D. 117 & 118 119,120,121 & 122 Vasisht, H.S. Vass, K.K. 103 Venugopalan, W. 58 % 63 73 Yadav, Y.S. Yohannan, T.M. 123

III Subject index

(Subject headings with their sub-headings are listed alphabetically. Reference is given to the serial number of the entry)

· ·	,	
BEHAVIOUR .	***	40,41,44,51,57,61,68, 74,105
BIOCHEMISTRY	• • •	38,52,55,93
DISTRIBUTION AND ECOLOGY	***	34,36,48,67,69,79,81, 91,94,109,119,120,121
FISH CULTURE		
a. Induced breedings	• • •	56
b. Freshwater culture	* * *	14,20,43,102
c. Brackishwater culture		18,26,27,112
d. General	•••	73,82,103,107
FISH EGGS, LARVAE & JUVENILES EMBRYOLOGY & DEVELOPMENT	• • •	33,59,115
FISHERIES BIOLOGY & POPULA- TION DYNOMICS	• • •	21,23,24,45,75,76,
FISHERIES MANAGEMENT		
a. General		11,26,63,66
b. Extension education	• • •	42
FISHERIES STATISTICS	• • •	17,18,24,49,118
FISHERIES SURVEYS & INVESTIGATIONS	• • •	36,37
FISHERY ECONOMICS		22
FISHING CRAFTS AND FISHING AI	DS	
a. Fishing vessels and accessories	• • •	4
. b. General		103
FISHING HARBOURS, PIERS, WHARVES, WOOD BERERS ETC.		116

- 05176		70,77,92
FISHING METHODS AND GEARS		78,97
FISH POISONING AND TOXICITY		12,72,83
FISH SEED		16,89
FISH TECHNOLOGY	•••	8
GENERAL REPORTS	• • •	90
GENETICS		
HYDROGRAPHY, METEOROLOGY & GENERAL ECOLOGY		
a. Marine	• • •	47,62,87 6,29,30,65,104
b. Inland	• • •	5.7.50.74,86,96,
MISCELLANEOUS	• • •	99,100,102,117
MORPHOLOGY, ANATOMY & HISTOLOGY	• • •	54,71,97,98,113, 114
PACKAGING, TRANSPORTATION AND MARKETING		
a. Packaging	• • •	31
b. Transportation	• • •	88
PATHOLOGY	• • •	1,2,3,13,19,25, 32,35,39,46,60, 64,80,84,95,101,
PHYSIOLOGY	• • •	56
PLANKTON a. Zooplankton b. Phytoplankton c. Productivity		62,110,119,122 34,95,110 30,65

POND FERTILIZATION & SOIL CHEMISTRY		15
SHELLFISH FISHERIES		58,85,92
SYMPOSIA, CONGRESSES, CONFERENCES ETC.	9 4 6	9,10
SYSTEMA TICS		53
WATER POLLUTION		6,28,29



(Based on the taxonomic terms of the Fishes, frogs, Prawns and Crabs occurring in the title and also in the body of the paper. The names of other group appear as per their taxonomic status in the Animal Kingdom. Names of the authorities have been omitted from taxonomic terms)

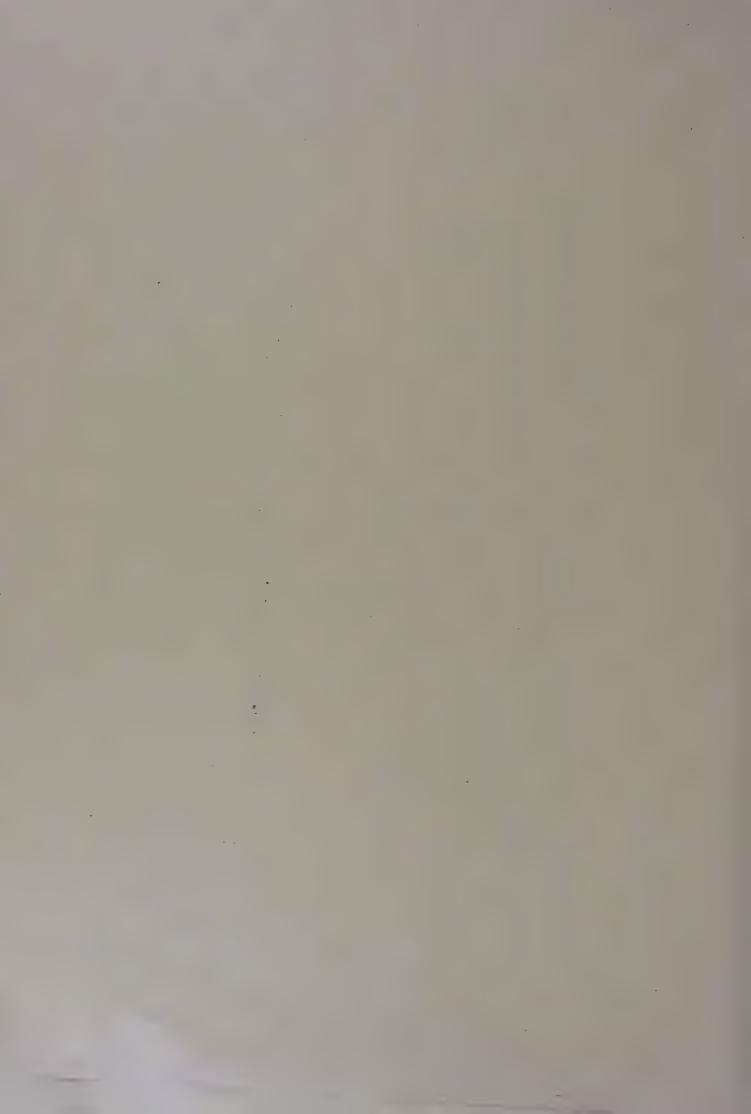
A		
Abudefaluf filifer		48
A. leucozona		48
Acanthepagrus berda	•••	
Acetes indicus		86
Acrossoch il		66
Acrossocheilus hexagonolepis	• • •	64
Alopias vulpinus		5
Ambassis Commersonii		66
Ambassis dayi		46
Amblypharyngodon microlepis		36
Amblypharyngodon mola		36
Anabas testudineus		73
Arius caelatus		80
Bagarius bagarius		118
B. bendelisis		114
Barilius bola .	• • •	36 & 114
	• • •	
Botia geto		36
Botia lohachata .		36
Callichorus pabda		36
Carangoides malabaricus	•••	6 6
	• • •	66
C. oblongus	• • •	101
Carassius auratus.	• • •	
Catla catla	7	20
Catla catla		56
Catla catla	• • •	88
Catla catla	• • •	106
Catla catla		118
Channa sp.		118
Channa goehua		54
Channa marulius		32
		97 & 113
Channa punctatus		
	• • •	86
Chanos chanos	• • •	88
Chanes chanes	• • •	112
Chanos chanos		36 & 118
Chela bacaila		36 @ 110
f ====================================	• • •	19
C. mrigala		20.
Cirrhinus mrigala	4 * *	64
C. mrigala		

		78
C. mrigala	• • •	108
C. mrigala	• • •	118
C. mrigala		44
C. batrachus	• • •	55
Clarias batrachus	• • •	73
C. batrachus	• • •	115
Clarias batrachus	• • •	36
Clupisoma garua	• • •	30
Crossocheilus latius	***	68
diplochilus		52
Cyprinus carpio	• • •	108
Cyprinus carpio	•••	36
C. carpio var communis		36
C. carpio var specularis	• • •	
Danio devario	• • •	36
Decapterus spp.		63
Diagramma sp.		86
Drepane punctata		66
Elops saurus	•••	86
Engraulis spp.		63
Entroplichthys vacha	• • •	118
Gadusia chapra	• • •	118
Garra gotyla gotyla	• • •	. 68
Garra lamta	• • •	113
Gastraphysus launaris	• • •	66
Gerres filamentos3	• • •	66 & 86
		118
Glossogobius giuris	•••	5
Halsydrus sp.	•••	66
Hemirahmphus georgii	• • •	38
H. fossilis		51
H. fossilis	• • •	73
H. fossilis	· · ·	·· 1 15
Heteropneustes fossili	• • •	21
Hilsa ilisha	• • •.	66 & 111
Hippolysmata ensirostis	• • •	00 4 111
H. molitrix		41
H. molitrix		94
Hypophthalmichthy's molitrix	•••	110
Kowala coval		: 66
Kurtus spp.		63
L. bata		118
L. calbasu		118
Labeo dero		36
Labeo dero		68
Labeo dero		113
Labeo dero		114
	• • •	

L. dyocheilus		36
Labeo fimbriatus		118 .
L. pangusia		
Labeo rohita		36.
L. rohita		20
L. rohita	• • •	44
	• • •	54
L. rohita	• • •	78
L. rohita	1	118
Lactarius lactarius		53
Lagocephalus inermis		
Lates calcarifer		56
Leiognathus fasciatus		27
lutionus islatus		56
Lutianus johni	•••	56
Lutianus lineolatus	•••	36
L. malabarious		36
Macrobrachium idae		6
Macrobrachium, kistensis		59
Macrobrachium rosenbergii		66
Mastacembelus armatus		
M Official		8
M. affinis	•••	3 & 92
	• • •	
Metapenaeus previcornis	خ د 6 - • • • • • • • • • • • • • • • • • •	16
M. dobsoni	,, 00	33 ["]
Metapenaeus dobsoni		6
	11 H 11 F	
M. dobsoni		92
M. dobsoni Metapenaeus, monoceros	9)2 53
Metapenaeus, monoceros Metapenaeus, monoceros	••• 6)2 53 56
M. dobsoni Metapenaeus, monoceros Metapenaeus, monoceros M. monoceros	6)2 53 66 92
Metapenaeus, monoceros Metapenaeus, monoceros	6	92 53 56 92 12
M. dobsoni Metapenaeus, monoceros Metapenaeus, monoceros M. monoceros Mugil spp.	6)2 53 66 92
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus	6	92 53 56 92 12
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus	6	92 53 56 92 12 8
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus M. cephalus		92 53 56 92 12 8 86
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus Mugil cephalus M. cephalus		92 53 66 92 12 8 8 8 8
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus M. cephalus M. cephalus M. cephalus		92 53 56 92 12 8 8 8 6 8
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus M. cephalus M. cephalus M. cephalus M. cunnesius		92 53 56 92 12 8 86 8 66 86
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus M. cephalus M. cephalus M. cephalus		92 53 56 92 12 8 86 8 66 8 86
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus M. cephalus M. cephalus M. cephalus M. cunnesius		92 53 56 92 12 8 66 8 66 8 86 8
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus Mugil cephalus M. cephalus M. cephalus M. cunnesius M. macrolepis		92 53 56 92 12 8 86 8 86 8 86 8
M. dobsoni Metapenaeus monoceros Metapenaeus monoceros M. monoceros Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus Mugil carinatus M. cephalus M. cephalus M. cephalus M. cunnesius M. macrolepis Mugil parsia		92 53 56 92 12 8 66 8 66 8 86 8
Metapenaeus monoceros Mugil spp. Mugil carinatus Mecaphalus Mecaph		92 53 56 92 12 8 86 8 86 8 86 8
Metapenaeus monoceros Mugil spp. Mugil carinatus Mugil carinatus Mecaphalus Mugil cunnesius Medil parsia Mugil parsia Mugil parsia Mugil seheli		92 53 56 92 12 8 86 8 86 8 86 8
Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Mugil spp. Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus Mugil cephalus Mecephalus Mecephalus Mecephalus Mecephalus Mecephalus Mecephalus Mecephalus Mugil cunnesius Mugil cunnesius Mugil parsia Mugil parsia Mugil seheli Mugil seheli Mugil seheli		22 53 56 92 12 8 86 8 86 8 86 8 8 8 8
Metapenaeus monoceros Mugil spp. Mugil carinatus Mecaphalus Mecaph		2 53 56 92 12 8 8 66 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Mugil spp. Mugil spp. Mugil carinatus Mugil carinatus Mugil carinatus Mugil cephalus Mecephalus Mecephalus Mecephalus Mecephalus Mecephalus Mecephalus Mecephalus Mugil cunnesius Mugil cunnesius Mugil parsia Mugil parsia Mugil seheli Mugil seheli Mugil seheli		22 53 56 92 12 8 86 8 86 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Metapenaeus monoceros Mugil spp. Mugil carinatus Mugil carinatus Mecaphalus M		22 53 56 92 12 8 86 8 86 8 86 8 86 8 86 8 86 8 86
Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Mugil spp. Mugil spp. Mugil carinatus Mugil carinatus Mugil cephalus Mecephalus Mecephal		22 53 56 92 12 8 86 86 86 86 86 86 86 86 86 86 86 86 8
Metapenaeus monoceros Mugil spp. Mugil carinatus Mugil carinatus Mecaphalus Mugil cunnesius Mugil parsia Mugil parsia Mugil seheli Mugil seheli Metade		22 53 56 92 12 8 86 86 86 88 86 88 86 88 86 88 86 88 86 88 88
Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Metapenaeus monoceros Mugil spp. Mugil spp. Mugil carinatus Mugil carinatus Mugil cephalus Mecephalus Mecephal		22 53 56 92 12 8 86 86 86 86 86 86 86 86 86 86 86 86 8

		66
Mystus gulio	• • •	118
Mystus seenghala	* 8727	
in the time	• • •	36
Mystus vittatus	• • •	100
Mystus vittatus		36
Nemacheilus rupicdla Nematalosa nasus		86
Nematalosa hasus Nematopalaenos tenuipes		45
Nemipterus spp.		63
Noemachislum botia		69
Noemachailus gracilis		69
Woeling Office and Control of the Co		
Noemacheilus kashmirensis		69
Noemacheilus marmoratus		69
Noemacheilus rupicola		69
Noemacheilus vittatus		69
Notopterus chitala		118
N. notopterus	• • •	36
Notopterus notopterus	• • •	118
Opisthopterus tardoore		66 & 63
		440
Ostgobrama cotio	• • •	118 · 13
Osteogeniosus militaris		
Otolithoides ruber	• • •	61 66
Pampus organiteus	• • •	
Pampus chinensis	• • •	76 63
Parapenaeopsis hardwickii	• • •	63
Paraponaeopsis stylifera	• • •	81
Parapercis alboqutta	• • •	48
Parapercis clathrata	• • •	
Paraplagusia bílineata	• • •	53
Paraplagusia b lochi	• • •	53
Paraplaqusia japonica	• • •	5 3 63
Penacus indicus	• • •	66
P. indicus P. indicus P. merquiensis	• • •	
P. Indicus	• • •	92
Panagua manadan	• • •	63 63
Penaeus monodon P. monodon	• • •	66
P. monodon	• • •	92
	• • •	63
Polynemus spp.	• • •	
Polynemus tetradactylus Psenes spp.	• • •	86 63
Psettodes spp.	• • •	63
Psettodes eru mi	• • •	66
Puntius chilinoides	• • •	
Puntius conchonius	• • •	36
- GILOTOS COLICIIONITAS	• • •	68

Puntius sarana		118
Rana tigrina		
Rastrelliger kanagurta		71
Rhinomusil	••• 79 &	123
Rhinomugil corsula		118
Rhynodon typus	• • •	5
Rhynoptera javanica		109
Rita rita		36
Salmon	• • •	112
Sardinella albella		88
Sardinella jussieu		93
Sardinalla longicans		24
Sargus nect		86
Saurida spp.		63
Scarus bipallidus	• • •	48
Scatophagus argus		66
Schizothorax sp.	• • •	103
Scolopsis sp.	• • •	86
Selar mate	• • •	66
Siganus oramin	• • •	66
Silonia silondia		118
Solesocera indica	• • •	63
Sphyraena spp.	• • •	63
S. andhraensis	• • •	49
Stolephorus bataviensis	• • •	49
Stolephorus buccaneeri		49
	• • •	93
Stolephorus devisi	• • •	49
Stolephorus heterolobus	• • •	49
Stolephorus haterolobus	• • •	93
C macrone	• • •	49
S. macrops	• • •	13
Tachysurus maculatus	• • •	57
Tachysurus tanuispinis	• • •	86
Therapon spp.	• • •	66
Therapon jarbua		93
Thryssa nystax	• • •	93
Thryssa setirostris		93
Thryssa uitrirostris	• • •	112
Tilapia mossambica	• • •	63
Trichiurus lepturus		40
Tor putitora	• • •	75
Tor putitora	• • •	75 & 118
Tor tor	• • •	70 2
Wallago attu	• • •	118
Zebrias japonicus		91
CROITES JAPONITORS		



(Serials are abbreviated according to FAD's World list of periodicals for Aquatic Sciences and Fisheries "and Insdoc's" Directory of Indian Scientific Periodicals, 1968. Reference is given to the serial number of the entry).

Annual Report, CIFRI, 1979		8
Aquaculture 1982, 26(3-4)	•••	51
Curr. Sci., 1982, 51(2)	• • •	71
Crustaceana, 1980, 39(2)	• • •	25
FAO Fisheries Technical Paper 207 (FARI/T207), FAO, Rome, 69p.	•••	11
Fish Technol., 1981, 18(1)	•••	1,2,3,16,31, 35,70,77,85, 88,117,118
Fishing Chimes, 1981, 1(8)	•••	4,26,42,43, 82,107
Fourth Workshop All India Co-ordinated Research Project, Brackishwater Fish Farming 24-25 October, 1981 at Kakinada Centre of the Andhra Pradesh	•••	9
ICLARM Newsletter, 1981, 4(2)		96
Indian J. Fish., 1.979, 26(1-2)		18,19,23,24, 33,45,49,52, 57,58,59,61, 62,63,66,67, 76,79,80,81, 83,87,92,93, 97,109,111, 116,123
Intensive Agriculture, 1981, 19(8)		50
Int. J. Ecol. Environ Sci., 1980, 6		28,29,30
Jalashri, UAS Students Magazine College of Fisheries, Mangalore		90,102

J. Bombay Nat. Hist. Soc., 1981, 78(3)	•••	34,69,91
J. Inland Fish. Soc. India, 1980, 12(1)	•••	15,17,20.21,22, 40,41,44,56,65, 73,74,75,78,94, 101,103,104,105, 106,110,115
J. Scient. Ind. Res., 1981, 40(11)	•••	99
Matsya, 1979, No.5	•••	13,14,27,38,46, 48,53,54,55,64, 68,98,100,108,113
Res. Bull. Punjab Univ., 1975,	•••	119,120,121,122
1980, 31(1-4)	•••	32,95,114
1981, 32(1-4)	•••	36,37
Sci. & Cult., 1981, 47(9)		7
48(1)		39
Seafd. Export J., 1981, 13(11)	•••	5,12,86
13(12)	•••	89,112
Souvenir of the Seminar on Fresh Water Fish Seed Production,1982 held at Cuttack on February 17 and 18, 1982	•••	72
Summer Institute on Farming System Integrating Agriculture, Livestock and Fish culture, Barrackpore. 6 July - 4 August,1	981	10
Vijnana Poshini, 1980, 1(1)	•••	6
1(2)	•••	47,60,84



